CLAIMS

1. A soil binding and revegetation composition comprising the mixture products of:

water;

a carbohydrate;

a protein;

an iron compound;

a strong base; and

a fibrous material comprising at least two different types of fibers,

one of the types of fibers that promote adhesion of the composition to soil and

another of the types of fibers that facilitate emergence of newly sprouted seeds or plants through the fibrous composition when applied to soil.

2. A soil binding and revegetation composition as defined in claim 1, said water having a concentration in a range of about 60% to about 99.9% by weight of the composition.

3. A soil binding and revegetation composition as defined in claim 1, wherein said carbohydrate and said protein comprise at least one type of endosperm.

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4. A soil binding and revegetation composition as defined in claim 3, wherein said endosperm is derived or extracted from at least one type of cereal grain or legume.

5. A soil binding and revegetation composition as defined in claim 4, wherein said endosperm is derived or extracted from at least one member selected from the group comprising wheat, rice, potatoes, corn, barley, sorghum, soy beans, pinto beans.

6. A soil binding and revegetation composition as defined in claim 3, wherein said carbohydrate and protein of said endosperm are derived from a single source.

7. A soil binding and revegetation composition as defined in claim 3, wherein said carbohydrate and protein of said endosperm are derived from different sources.

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8. A soil binding and revegetation composition as defined in claim 1, said endosperm having a concentration in a range of about 25% to about 95% by weight of solid components exclusive of said water.

9. A soil binding and revegetation composition as defined in claim 1, said endosperm having a concentration in a range of about 50% to about 85% by weight of solid components exclusive of said water.

10. A soil binding and revegetation composition as defined in claim 1, said endosperm having a concentration in a range of about 60% to about 75% by weight of solid components exclusive of said water.

11. A soil binding and revegetation composition as defined in claim 1, said iron compound comprising at least one type of iron oxide.

12. A soil binding and revegetation composition as defined in claim 1, said iron compound comprising at least one of ferric oxide, ferrous oxide, iron halide or iron hydroxide.

13. A soil binding and revegetation composition as defined in claim 1, said iron compound having a concentration in a range of about 0.01% to about 5% by weight of solid components exclusive of said water.

14. A soil binding and revegetation composition as defined in claim 1, said iron compound having a concentration in a range of about 0.1% to about 1% by weight of solid components exclusive of said water.

15. A soil binding and revegetation composition as defined in claim 1, said strong base comprising at least one member selected from the group comprising alkali metal oxides, alkaline earth metal oxides, alkali metal oxides, alkali metal hydroxides, and alkali metal carbonates.

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16. A soil binding and revegetation composition as defined in claim 1, said strong base having a concentration in a range of about 15% to about 50% by weight of solid components exclusive of said water.

17. A soil binding and revegetation composition as defined in claim 1, said strong base having a concentration in a range of about 25% to about 40% by weight of solid components exclusive of said water.

18. A soil binding and revegetation composition as defined in claim 1, said fibers that promote adhesion of the composition to soil comprising a more highly processed fiber and said fibers that facilitate emergence of newly sprouted seeds or plants through the fibrous composition comprising a coarser fiber.

19. A soil binding and revegetation composition as defined in claim 18, said more highly processed fiber comprising at least one of recycled paper, recycled newsprint, partially digested wood or plant fibers, chemically or pulped wood or plant fibers.

20. A soil binding and revegetation composition as defined in claim 18, said coarser fiber comprising at least one of thermally processed wood fibers, other wood fibers, staple fibers, synthetic fibers, or inorganic fibers.

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21. A soil binding and revegetation composition as defined in claim 1, further comprising a pH adjustor in an amount so that the composition has a pH in a range of about 9 to about 13.

22. A soil binding and revegetation composition as defined in claim 21, wherein said pH adjustor included in an amount so that the composition has a pH in a range of about 10 to about 12.8.

23. A soil binding and revegetation composition as defined in claim 21, wherein said pH adjustor is included in an amount so that the composition has a pH in a range of about 10.5 to about 12.6.

24. A soil binding and revegetation composition as defined in claim 21, said pH adjustor comprising at least one organic acid.

25. A soil binding and revegetation composition as defined in claim 24, said organic acid comprising at least one of citric acid, carbonic acid, formic acid, acetic acid, propanoic acid, benzoic acid, oxalic acid, glycolic acid, or ascorbic acid.

26. A soil binding and revegetation composition as defined in claim 1, further comprising at least one type of plant seeds.

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27. A precursor composition for use in manufacturing a soil binding and revegetation composition, comprising:

a carbohydrate;

a protein;

an iron compound;

a strong base; and

a fibrous material comprising at least two different types of fibers,

one of the types of fibers comprising more highly processed fibers and

another of the types of fibers comprising coarser fibers.

28. A precursor composition as defined in claim 27, the precursor composition comprising at least two parts that are initially stored separately so that said two parts are individually mixable with water when manufacturing the soil revegetation composition.

29. A precursor composition as defined in claim 27, wherein said carbohydrate and said protein comprise at least one type of endosperm.

30. A precursor composition as defined in claim 29, a mixture of at least a portion of said endosperm, iron compound and strong base comprising a first part of the precursor composition and the fibrous material comprising a second part of the precursor composition.

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31. A precursor composition as defined in claim 27, said more highly processed fibers comprising at least one of recycled paper, recycled newsprint, partially digested wood or plant fibers, or chemically pulped wood or plant fibers.

32. A precursor composition as defined in claim 27, said coarser fibers comprising at least one of thermally processed wood fibers, other wood fibers, staple fibers, synthetic fibers, or inorganic fibers.

33. A precursor composition as defined in claim 27, further comprising a pH adjustor.

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34. A method of manufacturing a soil binding and revegetation composition, comprising:

mixing together water, an endosperm comprising carbohydrate and protein, an iron compound, and a strong base to form an intermediate composition; and

adding a fibrous material to form the soil binding and revegetation composition, said fibrous material comprising at least two different types of fibers,

one of the types of fibers comprising more highly processed fibers and

another of the types of fibers comprising coarser fibers.

35. A method as defined in claim 34, said more highly processed fibers comprising at least one of recycled paper, recycled newsprint, partially digested wood or plant fibers, or chemically pulped wood or plant fibers.

36. A method as defined in claim 34, coarser fibers comprising at least one of thermally processed wood fibers, other wood fibers, staple fibers, synthetic fibers, or inorganic fibers.

37. A method as defined in claim 34, further comprising adding a pH adjustor to the intermediate composition or soil binding and revegetation composition in order to adjust the pH of the intermediate or soil binding and revegetation composition to within a range of about 9 to about 13.

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38. A method of treating soil so as to facilitate revegetation thereof, comprising:

applying the soil binding and revegetation composition of claim 1 to soil; and

allowing the soil binding and revegetation composition to bind particles found within the soil.

39. A method of treating soil as defined in claim 38, the soil binding and revegetation composition being applied by aerial spraying or broadcasting.

40. A method of treating soil as defined in claim 38, the soil binding and revegetation composition being applied by mechanical ground-based spraying or broadcasting.

41. A method of treating soil as defined in claim 38, the soil binding and revegetation composition being applied by manual spraying or broadcasting.

42. A method of treating soil as defined in claim 38, the soil binding and revegetation composition being applied to soil at a construction site in order to prevent erosion and promote revegetation of the soil.

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43. A method of treating soil as defined in claim 38, the soil binding and revegetation composition being applied to at least one of soil or ash at a burn site in order to prevent erosion and promote revegetation of the soil.

44. A method of treating soil as defined in claim 38, the soil binding and revegetation composition being applied to denuded soil resulting from at least one of a land slide, an avalanche, grading of land.

45. A method of treating soil as defined in claim 38, the soil binding and revegetation composition being applied to a powder resulting from the grinding of rock or other industrial or building operations or overburden and tailings from mining.

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